

Amendments to the Claims

The listing of claims below will replace all prior versions and listings of claims in the present application.

Claim Listing

1 1. (Currently Amended) A method for initializing a node in a network, the
2 network including a plurality of nodes connected by first and second rings formed by two
3 or more transmission media, the method comprising:

4 connecting the node to each of the first and second rings;

5 setting a locally significant ring identifier for each of the first and second rings

6 without concern for the ring identifier established by any other node in the

7 network for either of the two rings, wherein the locally significant ring

8 identifier is initially significant only to the node;

9 discovering the locally significant ring identifiers for each other node coupled to
10 the network;

11 storing the locally significant ring identifiers and associated node addresses for
12 each node in the network; and

13 determining routing decisions for one or more packets received at the node along

14 each of the first and second rings using the locally significant identifiers

15 associated with a node that sent the packets.

1 2. (Original) The method of claim 1, wherein the step of storing further
2 comprises storing the locally significant ring identifiers and associated node addresses for
3 each ring in a table.

1 3. (Original) The method of claim 2, wherein step of discovering the locally
2 significant ring identifiers includes
3 generating a topology packet including the locally significant identifier for a ring
4 and the address of the node and sending the topology packet to a next node
5 in the network;

6 receiving a topology packet back on the ring that includes an address for each
7 node on the network coupled to the ring including a locally significant
8 identifier for the ring for each node; and
9 storing the locally significant identifier for the ring for each node.

1 4. (Currently Amended) A method for initializing a node in a network, the
2 network including a plurality of nodes connected by first and second rings formed by two
3 or more transmission media, the method comprising:
4 connecting the node to each of the first and second rings;
5 ~~determining~~ selecting a ring identifier for each of the first and second rings
6 coupled to the node after connection, wherein the selecting is performed
7 by the node;
8 discovering topology information for the network including the identity of each
9 node coupled to each ring;
10 storing the topology information; and
11 determining routing decisions for one or more packets received at the node along
12 each of the first and second rings using the ring identifier information.

1 5. (Currently Amended) The method of claim 4, wherein the process of
2 ~~determining~~ selecting a ring identifier for each of the first and second rings includes
3 generating a ring query packet that includes a proposed ring identifier for one
4 ring;
5 forwarding the ring query packet to a next node on the one ring; and
6 waiting for a response that includes information for determining a correct ring
7 identifier for the one ring.

1 6. (Original) The method of claim 5, wherein the step of waiting for a response
2 includes
3 if a broadcast identifier is received that indicates an identity for one of the first or
4 second rings, then assigning ring identifiers for the node in accordance
5 with the broadcast identifier.

1 7. (Original) The method of claim 5, wherein the step of waiting for a response
2 includes
3 if the ring query packet is returned on the one ring,
4 setting the ring identifier for the one ring to the proposed ring identifier,
5 setting a ring identifier for a second one of the first and second rings to a
6 complementary value, and
7 broadcasting the ring identifier on the one ring.

1 8. (Original) The method of claim 5, wherein the step of waiting for a response
2 includes receiving a response from another node on the network that includes an
3 indication of a correct ring identifier for the one ring and setting the ring identifier for the
4 one ring to the correct ring identifier.

1 9. (Original) The method of claim 5, wherein the step of waiting for a response
2 includes receiving a ring query packet on the one ring from another node;
3 evaluating the received ring query packet to determine if the query should be
4 forwarded on the one ring; and
5 if the received ring query packet is to be forwarded, waiting for a broadcast
6 identifier indicating a correct ring identifier for the one ring.

1 10. (Original) The method of claim 9, wherein the step of evaluating includes
2 comparing the addresses of the node that generated the received ring query packet and the
3 node,
4 determining which node, among the node that generated the received ring query
5 and the node, should set the ring identifier for the one ring, and
6 if the node is to set the ring identifier for the one ring, then dropping without
7 forwarding the received ring query packet else forwarding the received
8 ring query packet to a next node on the one ring.

1 11. (Currently Amended) The method of claim 10, wherein the step of
2 ~~determining~~ selecting includes selecting a node with the highest MAC address.

1 12. (Currently Amended) The method of claim 10, wherein the step of
2 ~~determining~~ selecting includes selecting a node with the lowest MAC address.

1 13. (Currently Amended) The method of claim 4, wherein the step of
2 ~~determining~~ selecting a ring identifier for each of the first and second rings coupled to the
3 node after connection includes
4 setting a locally significant ring identifier for each of the first and second rings
5 without concern for the ring identifier established by any other node in the
6 network for either of the two rings;
7 discovering the locally significant ring identifiers for each other node coupled to
8 the network and
9 storing the locally significant ring identifiers and associated node addresses for
10 each node in the network; ~~and~~
11 ~~where the determining step includes determining routing decisions for one or~~
12 ~~more packets received at the node along each of the first and second rings~~
13 ~~using the locally significant identifiers associated with a node that sent the~~
14 ~~packets.~~

1 14. (Original) The method of claim 13, wherein the step of storing further
2 comprises storing the locally significant ring identifiers and associated node addresses for
3 each ring in a table.

1 15. (Original) The method of claim 14, wherein the step of discovering the
2 locally significant ring identifiers includes
3 generating a topology packet including the locally significant identifier for a ring
4 and the address of the node and sending the topology packet to a next node
5 in the network;
6 receiving a topology packet back on the ring that includes an address for each
7 node on the network coupled to the ring including a locally significant
8 identifier for the ring for each node; and
9 storing the locally significant identifier for the ring for each node.

1 16. (Currently Amended) A method for initializing a node in a network, the
2 network including a plurality of nodes connected by first and second rings formed by two
3 or more transmission media, the method comprising:

4 connecting the node to each of the first and second rings;

5 ~~determining~~ selecting a ring identifier for each of the first and second rings

6 coupled to the node after connection, wherein the selecting is performed
7 by the node;

8 generating a ring query packet that includes a proposed ring identifier for one
9 node;

10 forwarding the ring query packet to a next node on the one ring; and

11 waiting for a response that includes information for determining a correct ring
12 identifier for the one ring; and

13 determining routing decisions for one or more packets received at the node along
14 each of the first and second rings using the ring identifier information.

1 17. (Original) The method of claim 16, wherein the step of waiting for a
2 response includes
3 if a broadcast identifier is received that indicates an identity for one of the first or
4 second rings, then assigning ring identifiers for the node in accordance
5 with the broadcast identifier.

1 18. (Original) The method of claim 16, wherein the step of waiting for a
2 response includes
3 if the ring query packet is returned on the one ring,
4 setting the ring identifier for the one ring to the proposed ring identifier,
5 setting a ring identifier for a second one of the first and second rings to a
6 complementary value, and
7 broadcasting the ring identifier on the one ring.

1 19. (Original) The method of claim 16, wherein the step of waiting for a
2 response includes receiving a response from another node on the network that includes an
3 indication of a correct ring identifier for the one ring and setting the ring identifier for the
4 one ring to the correct ring identifier.

1 20. (Original) The method of claim 16, wherein the step of waiting for a
2 response includes
3 receiving a ring query packet on the one ring from another node;
4 evaluating the received ring query packet to determine if the query should be
5 forwarded on the one ring; and
6 if the received ring query packet is to be forwarded, waiting for a broadcast
7 identifier indicating a correct ring identifier for the one ring.

1 21. (Original) The method of claim 20, wherein the step of evaluating includes
2 comparing the addresses of the node that generated the received ring query packet
3 and the node,
4 determining which node, among the node that generated the received ring query
5 and the node, should set the ring identifier for the one ring, and
6 if the node is to set the ring identifier for the one ring, then dropping without
7 forwarding the received ring query packet else forwarding the received
8 ring query packet to a next node on the one ring.

1 22. (Currently Amended) The method of claim 21, wherein the step of
2 ~~determining~~ selecting includes selecting a node with the highest MAC address.

1 23. (Currently Amended) The method of claim 21, wherein the step of
2 ~~determining~~ selecting includes selecting a node with the lowest MAC address.

1 24. (Currently Amended) A computer readable medium storing a program for
2 initializing a node in a network, the network including a plurality of nodes connected by

3 first and second rings formed by two or more transmission media, the computer program
 4 including instructions for causing a computer to:
 5 connect a node to each of the first and second rings;
 6 set a locally significant ring identifier for each of the first and second rings
 7 without concern for the ring identifier established by any other node in the
 8 network for either of the two rings, wherein the locally significant ring
 9 identifier is initially significant only to the node;
 10 discover the locally significant ring identifiers for each other node coupled to the
 11 network;
 12 store the locally significant ring identifiers and associated node addresses for each
 13 node in the network; and
 14 determine routing decisions for one or more packets received at the node along
 15 each of the first and second rings using the locally significant identifiers
 16 associated with a node that sent the packets.

1 25. (Currently Amended) A computer readable medium storing a program for
 2 initializing a node in a network, the network including a plurality of nodes connected by
 3 first and second rings formed by two or more transmission media, the program including
 4 instructions for causing a computer to:
 5 connect the node to each of the first and second rings;
 6 ~~determine~~ select a ring identifier for each of the first and second rings coupled to
 7 the node after connection, wherein the selecting is performed by the node;
 8 discover topology information for the network including the identity of each node
 9 coupled to each ring;
 10 store the topology information; and
 11 determine routing decisions for one or more packets received at the node along
 12 each of the first and second rings using the ring identifier information.

1 26. (Currently Amended) A computer readable medium storing a program for
 2 initializing a node in a network, the network including a plurality of nodes connected by
 3 first and second rings formed by two or more transmission media, the program including

instructions for causing a computer to:

connect the node to each of the first and second rings;

~~determine~~ select a ring identifier for each of the first and second rings coupled to

the node after connection, wherein the selecting is performed by the node;

generating a ring query packet that includes a proposed ring identifier for one node;

forwarding the ring query packet to a next node on the one ring; and

waiting for a response that includes information for determining a correct ring identifier for the one ring; and

determine routing decisions for one or more packets received at the node along each of the first and second rings using the ring identifier information.

27. (Currently Amended) A node in a network, the network including a plurality of nodes connected by first and second rings formed by two or more transmission media, the node comprising:

an interface for connecting the node to each of the first and second rings;

means for setting a locally significant ring identifier for each of the first and

second rings without concern for the ring identifier established by any

other node in the network for either of the two rings, wherein the locally

significant ring identifier is initially significant only to the node;

means for discovering the locally significant ring identifiers for each other node coupled to the network;

a memory for storing the locally significant ring identifiers and associated node

addresses for each node in the network; and

logic for determining routing decisions for one or more packets received at the

node along each of the first and second rings using the locally significant

identifiers associated with a node that sent the packets.

1 28. (Currently Amended) A node in a network, the network including a plurality
2 of nodes connected by first and second rings formed by two or more transmission media,
3 the node comprising:

4 an interface for connecting the node to each of the first and second rings;

5 means for ~~determining~~ selecting a ring identifier for each of the first and second
6 rings coupled to the node after connection, wherein the selecting is
7 performed by the node;

8 means for discovering topology information for the network including the identity
9 of each node coupled to each ring;

10 a memory for storing the topology information; and

11 logic for determining routing decisions for one or more packets received at the
12 node along each of the first and second rings using the ring identifier
13 information.